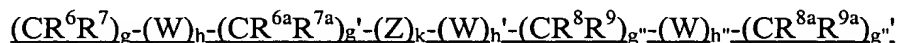


This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A compound, comprising: a targeting moiety and a chelator, wherein the targeting moiety is bound to the chelator, is a peptide or peptidomimetic, and binds to a receptor that is upregulated during angiogenesis, the receptor is $\alpha_v\beta_3$, and the compound has 0-1 a linking groups between the targeting moiety and chelator, the linking group having the formula:



CI
wherein,


W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO₂, (OCH₂CH₂)_s, (CH₂CH₂O)_{s'}, (OCH₂CH₂CH₂)_{s''}, (CH₂CH₂CH₂O)_t, and (aa)_{t'};

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R¹⁰, C₃₋₁₀ cycloalkyl substituted with 0-3 R¹⁰, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R¹⁰;

R⁶, R^{6a}, R⁷, R^{7a}, R⁸, R^{8a}, R⁹ and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO₃H, PO₃H, C₁ C₅ alkyl substituted with 0-3 R¹⁰, aryl substituted with 0-3 R¹⁰, benzyl substituted with 0-3 R¹⁰, and C₁ C₅ alkoxy substituted with 0-3 R¹⁰, NHC(=O)R¹¹, C(=O)NHR¹¹, NHC(=O)NHR¹¹, NHR¹¹, R¹¹, and a bond to the chelator;

R¹⁰ is independently selected at each occurrence from the group: a bond to the chelator, COOR¹¹, OH, NHR¹¹, SO₃H, PO₃H, aryl substituted with 0-3 R¹¹, C₁₋₅ alkyl substituted with 0-1 R¹², C₁₋₅ alkoxy substituted with 0-1 R¹², and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R¹¹;



R¹¹ is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R¹², a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R¹², C₃₋₁₀ cycloalkyl substituted with 0-1 R¹², polyalkylene glycol substituted with 0-1 R¹², carbohydrate substituted with 0-1 R¹², cyclodextrin substituted with 0-1 R¹², amino acid substituted with 0-1 R¹², polycarboxyalkyl substituted with 0-1 R¹², polyazaalkyl substituted with 0-1 R¹², peptide substituted with 0-1 R¹², wherein the peptide is comprised of 2-10 amino acids, and a bond to the chelator;

R¹² is a bond to the chelator;

k is selected from 0, 1, and 2;

h is selected from 0, 1, and 2;

h' is selected from 0, 1, 2, 3, 4, and 5;

h'' is selected from 0, 1, 2, 3, 4, and 5;

g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

g''' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

s is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

s' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

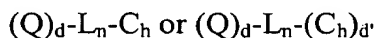
s'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

t is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10; and

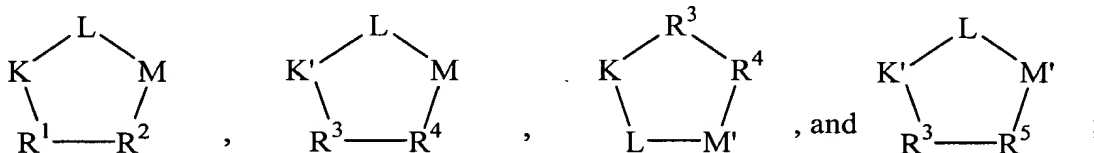
t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.

Claim 2 (Currently Amended): A compound according to Claim 1, wherein the targeting moiety is a peptide or a mimetic thereof ~~and the receptor is $\alpha_v\beta_3$~~ and the linking group is present between the targeting moiety and chelator.

Claim 3 (Previously Amended): A compound according to Claim 2, the compound is of the formula:



wherein, Q is a peptide independently selected from the group:




K is an L-amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ -N-2-imidazolinylnornithine, δ -N-benzylcarbamoylnornithine, and β -2-benzimidazolylacetyl-1,2-diaminopropionic acid;

K' is a-D amino acid independently selected at each occurrence from the group: arginine, citrulline, N-methylarginine, lysine, homolysine, 2-aminoethylcysteine, δ -N-2-imidazolinylnornithine, δ -N-benzylcarbamoylnornithine, and β -2-benzimidazolylacetyl-1, 2-diaminopropionic acid;

L is independently selected at each occurrence from the group: glycine, L-alanine, and D-alanine;

M is L-aspartic acid;


M' is D-aspartic acid;

 R¹ is an amino acid substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, phenylalanine, thienylalanine, phenylglycine, cyclohexylalanine, homophenylalanine, 1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, and methionine;

R² is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, 2-aminohexanoic acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, serine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, cysteine, penicillamine, methionine, and 2-aminothiazole-4-acetic acid;

R³ is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, and D-methionine;

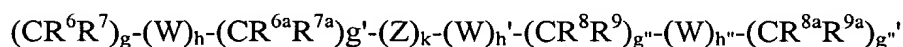
R⁴ is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-2-aminohexanoic acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, D-cysteine, D-penicillamine, D-methionine, and 2-aminothiazole-4-acetic acid;

 R⁵ is an amino acid, substituted with 0-1 bonds to L_n, independently selected at each occurrence from the group: glycine, L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-2-aminohexanoic acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-serine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, L-cysteine, L-penicillamine, L-methionine, and 2-aminothiazole-4-acetic acid;

provided that one of R¹, R², R³, R⁴, and R⁵ in each Q is substituted with a bond to L_n, further provided that when R² is 2-aminothiazole-4-acetic acid, K is N-methylarginine, further provided that when R⁴ is 2-aminothiazole-4-acetic acid, K and K' are N-methylarginine, and still further provided that when R⁵ is 2-aminothiazole-4-acetic acid, K' is N-methylarginine;

d is selected from 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;

L_n is a linking group having the formula:




provided that $g+h+g'+k+h'+g''+h''+g'''$ is other than 0;

W is independently selected at each occurrence from the group: O, S, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO₂, (OCH₂CH₂)_s, (CH₂CH₂O)_{s'}, (OCH₂CH₂CH₂)_{s''}, (CH₂CH₂CH₂O)_t, and (aa)_{t'};

aa is independently at each occurrence an amino acid;

Z is selected from the group: aryl substituted with 0-3 R^{10} , C_{3-10} cycloalkyl substituted with 0-3 R^{10} , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{10} ;

R^6 , R^{6a} , R^7 , R^{7a} , R^8 , R^{8a} , R^9 and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO₃H, PO₃H, C_1 C_5 alkyl substituted with 0-3 R^{10} , aryl substituted with 0-3 R^{10} , benzyl substituted with 0-3 R^{10} , and C_1 C_5 alkoxy substituted with 0-3 R^{10} , NHC(=O) R^{11} , C(=O)NHR¹¹, NHC(=O)NHR¹¹, NHR¹¹, R^{11} , and a bond to C_h ;

 R^{10} is independently selected at each occurrence from the group: a bond to C_h , COOR¹¹, OH, NHR¹¹, SO₃H, PO₃H, aryl substituted with 0-3 R^{11} , C_{1-5} alkyl substituted with 0-1 R^{12} , C_{1-5} alkoxy substituted with 0-1 R^{12} , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{11} ;

R^{11} is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R^{12} , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R^{12} , C_{3-10} cycloalkyl substituted with 0-1 R^{12} , polyalkylene glycol substituted with 0-1 R^{12} , carbohydrate substituted with 0-1 R^{12} , cyclodextrin substituted with 0-1 R^{12} , amino acid substituted with 0-1 R^{12} , polycarboxyalkyl substituted with 0-1 R^{12} , polyazaalkyl substituted with 0-1 R^{12} , peptide substituted with 0-1 R^{12} , wherein the peptide is comprised of 2-10 amino acids, and a bond to C_h ;

R^{12} is a bond to C_h ;

k is selected from 0, 1, and 2;

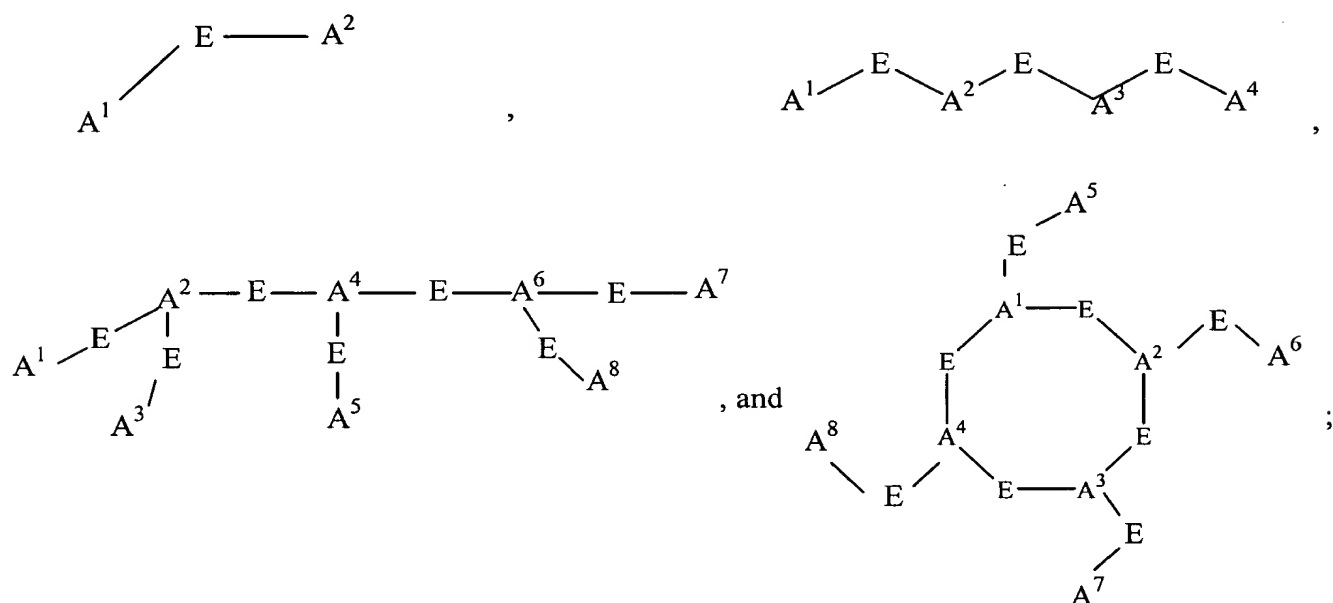
h is selected from 0, 1, and 2;

h' is selected from 0, 1, 2, 3, 4, and 5;

h'' is selected from 0, 1, 2, 3, 4, and 5;

g is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 g' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 g'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 g''' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 s is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 s' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 s'' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 t is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;
 t' is selected from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10;


C1
 C_h is a metal bonding unit having a formula selected from the group:



A¹, A², A³, A⁴, A⁵, A⁶, A⁷, and A⁸ are independently selected at each occurrence from the group N, NR¹³, NR¹³R¹⁴, S, SH, S(Pg), O, OH, PR¹³, PR¹³R¹⁴, P(O)R¹⁵R¹⁶, and a bond to L_n;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group:
 C₁-C₁₀ alkyl substituted with 0-3 R¹⁷, aryl substituted with 0-3 R¹⁷, C₃₋₁₀ cycloalkyl

substituted with 0-3 R^{17} , heterocyclo C_{1-10} alkyl substituted with 0-3 R^{17} , wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl C_{1-10} alkyl substituted with 0-3 R^{17} , C_{1-10} alkyl C_{6-10} aryl substituted with 0-3 R^{17} , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17} ;



R^{13} , and R^{14} are each independently selected from the group: a bond to L_n , hydrogen, C_1 - C_{10} alkyl substituted with 0-3 R^{17} , aryl substituted with 0-3 R^{17} , C_{1-10} cycloalkyl substituted with 0-3 R^{17} , heterocyclo C_{1-10} alkyl substituted with 0-3 R^{17} , wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl C_{1-10} alkyl substituted with 0-3 R^{17} , C_{1-10} alkyl C_{6-10} aryl substituted with 0-3 R^{17} , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17} , and an electron, provided that when one of R^{13} or R^{14} is an electron, then the other is also an electron;

alternatively, R^{13} and R^{14} combine to form $=C(R^{20})(R^{21})$;

R^{15} and R^{16} are each independently selected from the group: a bond to L_n , OH, C_1 - C_{10} alkyl substituted with 0-3 R^{17} , C_1 - C_{10} alkyl substituted with 0-3 R^{17} , aryl substituted with 0-3 R^{17} , C_{3-10} cycloalkyl substituted with 0-3 R^{17} , heterocyclo C_{1-10} alkyl substituted with 0-3 R^{17} , wherein the heterocyclo group is a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O, C_{6-10} aryl C_{1-10} alkyl substituted with 0-3 R^{17} , C_{1-10} alkyl C_{6-10} aryl substituted with 0-3 R^{17} , and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{17} ;

R^{17} is independently selected at each occurrence from the group: a bond to L_n , =O, F, Cl, Br, I, $-CF_3$, $-CN$, $-CO_2R^{18}$, $-C(=O)R^{18}$, $-C(=O)N(R^{18})_2$, $-CHO$, $-CH_2OR^{18}$, $-OC(=O)R^{18}$, $-OC(=O)OR^{18a}$, $-OR^{18}$, $-OC(=O)N(R^{18})_2$, $-NR^{19C}(=O)R^{18}$, $-NR^{19C}(=O)OR^{18a}$,

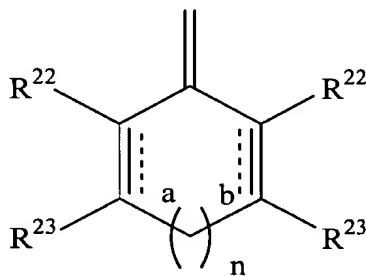
-NR¹⁹C(=O)N(R¹⁸)₂, -NR¹⁹SO₂N(R¹⁸)₂, -NR¹⁹SO₂R^{18a}, -SO₃H, -SO₂R^{18a}, -SR¹⁸,
-S(=O)R^{18a}, -SO₂N(R¹⁸)₂, -N(R¹⁸)₂, -NHC(=S)NHR¹⁸, =NOR¹⁸, NO₂, -
C(=O)NHR¹⁸, -C(=O)NHN(R¹⁸)R^{18a}, -OCH₂CO₂H, 2-(1 morpholino)ethoxy, C₁-C₅
alkyl, C₂-C₄ alkenyl, C₃-C₆ cycloalkyl, C₃-C₆ cycloalkylmethyl, C₂-C₆ alkoxyalkyl,
aryl substituted with 0-2 R¹⁸, and a 5-10 membered heterocyclic ring system
containing 1-4 heteroatoms independently selected from N, S, and O;

R¹⁸, R^{18a}, and R¹⁹ are independently selected at each occurrence from the group: a bond to
L_n, H, C₁-C₆ alkyl, phenyl, benzyl, C₁-C₆ alkoxy, halide, nitro, cyano, and
trifluoromethyl;

Pg is a thiol protecting group;

R²⁰ and R²¹ are independently selected from the group: H, C₁-C₁₀ alkyl, -CN, -CO₂R²⁵,
-C(=O)R²⁵, -C(=O)N(R²⁵)₂, C₂-C₁₀ 1-alkene substituted with 0-3 R²³, C₂-C₁₀ 1-
alkyne substituted with 0-3 R²³, aryl substituted with 0-3 R²³, unsaturated 5-10
membered heterocyclic ring system containing 1-4 heteroatoms independently
selected from N, S, and O and substituted with 0-3 R²³, and unsaturated C₃₋₁₀
carbocycle substituted with 0-3 R²³;

alternatively, R²⁰ and R²¹, taken together with the divalent carbon radical to which they are
attached form:



R^{22} and R^{23} are independently selected from the group: H, R^{24} , C_1 - C_{10} alkyl substituted with 0-3 R^{24} , C_2 - C_{10} alkenyl substituted with 0-3 R^{24} , C_2 - C_{10} alkynyl substituted with 0-3 R^{24} , aryl substituted with 0-3 R^{24} , a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{24} , and C_{3-10} carbocycle substituted with 0-3 R^{24} ;

alternatively, R^{22} , R^{23} taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

a and **b** indicate the positions of optional double bonds and **n** is 0 or 1;

R^{24} is independently selected at each occurrence from the group: =O, F, Cl, Br, I, -CF₃, -CN, -CO₂ R^{25} , -C(=O) R^{25} , -C(=O)N(R^{25})₂, -N(R^{25})₃⁺, -CH₂OR²⁵, -OC(=O) R^{25} , -OC(=O)OR^{25a}, -OR²⁵, -OC(=O)N(R^{25})₂, -NR²⁶C(=O) R^{25} , -NR²⁶C(=O)OR^{25a}, -NR²⁶C(=O)N(R^{25})₂, -NR²⁶SO₂N(R^{25})₂, -NR²⁶SO₂ R^{25a} , -SO₃H, -SO₂ R^{25a} , -SR²⁵, -S(=O) R^{25a} , -SO₂N(R^{25})₂, -N(R^{25})₂, =NOR²⁵, -C(=O)NHOR²⁵, -OCH₂CO₂H, and 2-(1-morpholino)ethoxy; and,

R^{25} , R^{25a} , and R^{26} are each independently selected at each occurrence from the group: hydrogen and C_1 - C_6 alkyl;


and a pharmaceutically acceptable salt thereof.

Claim 4 (Currently Amended): A compound according to Claim 3, ~~the present invention provides a compound~~, wherein:

L is glycine;

R^1 is an amino acid, optionally substituted with a bond to L_n , independently selected at each occurrence from the group: L-valine, D-valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, phenylalanine, phenylglycine,

cyclohexylalanine, homophenylalanine, lysine, ornithine, 1,2-diaminobutyric acid, and 1,2-diaminopropionic acid;



R^2 is an amino acid, optionally substituted with a bond to L_n , independently selected at each occurrence from the group: valine, alanine, leucine, isoleucine, norleucine, 2-aminobutyric acid, tyrosine, L-phenylalanine, D-phenylalanine, thienylalanine, phenylglycine, biphenylglycine, cyclohexylalanine, homophenylalanine, L-1-naphthylalanine, D-1-naphthylalanine, lysine, ornithine, 1,2-diaminobutyric acid, 1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

R^3 is an amino acid, optionally substituted with a bond to L_n , independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-lysine, D-serine, D-ornithine, D-1,2-diaminobutyric acid, and D-1,2-diaminopropionic acid;

R^4 is an amino acid, optionally substituted with a bond to L_n , independently selected at each occurrence from the group: D-valine, D-alanine, D-leucine, D-isoleucine, D-norleucine, D-2-aminobutyric acid, D-tyrosine, D-phenylalanine, D-thienylalanine, D-phenylglycine, D-cyclohexylalanine, D-homophenylalanine, D-1-naphthylalanine, D-lysine, D-ornithine, D-1,2-diaminobutyric acid, D-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

R^5 is an amino acid, optionally substituted with a bond to L_n , independently selected at each occurrence from the group: L-valine, L-alanine, L-leucine, L-isoleucine, L-norleucine, L-2-aminobutyric acid, L-tyrosine, L-phenylalanine, L-thienylalanine, L-phenylglycine, L-cyclohexylalanine, L-homophenylalanine, L-1-naphthylalanine, L-lysine, L-ornithine, L-1,2-diaminobutyric acid, L-1,2-diaminopropionic acid, and 2-aminothiazole-4-acetic acid;

d is selected from 1, 2, and 3;

W is independently selected at each occurrence from the group: O, NH, NHC(=O), C(=O)NH, C(=O), C(=O)O, OC(=O), NHC(=S)NH, NHC(=O)NH, SO₂, (OCH₂CH₂)_s, (CH₂CH₂O)_s, (OCH₂CH₂CH₂)_{s'}, and (CH₂CH₂CH₂O)_t,

Z is selected from the group: aryl substituted with 0-1 R¹⁰, C₃₋₁₀ cycloalkyl substituted with 0-1 R¹⁰, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R¹⁰;

R⁶, R^{6a}, R⁷, R^{7a}, R⁸, R^{8a}, R⁹, and R^{9a} are independently selected at each occurrence from the group: H, =O, COOH, SO₃H, C₁-C₅ alkyl substituted with 0-1 R¹⁰, aryl substituted with 0-1 R¹⁰, benzyl substituted with 0-1 R¹⁰, and C₁-C₅ alkoxy substituted with 0-1 R¹⁰, NHC(=O)R¹¹, C(=O)NHR¹¹, NHC(=O)NHR¹¹, NHR¹¹, R¹¹, and a bond to C_h;

R¹⁰ is independently selected at each occurrence from the group: COOR¹¹, OH, NHR¹¹, SO₃H, aryl substituted with 0-1 R¹¹, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R¹¹, C₁-C₅ alkyl substituted with 0-1 R¹², C₁-C₅ alkoxy substituted with 0-1 R¹², and a bond to C_h;

R¹¹ is independently selected at each occurrence from the group: H, aryl substituted with 0-1 R¹², a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-1 R¹², polyalkylene glycol substituted with 0-1 R¹², carbohydrate substituted with 0-1 R¹², cyclodextrin substituted with 0-1 R¹², amino acid substituted with 0-1 R¹², and a bond to C_h;

k is 0 or 1;

h is 0 or 1;

h' is 0 or 1;

s is selected from 0, 1, 2, 3, 4, and 5;

s' is selected from 0, 1, 2, 3, 4, and 5;

s" is selected from 0, 1, 2, 3, 4, and 5;

t is selected from 0, 1, 2, 3, 4, and 5;

A¹, A², A³, A⁴, A⁵, A⁶, A⁷, and A⁸ are independently selected at each occurrence from the group: NR¹³, NR¹³R¹⁴, S, SH, S(Pg), OH, and a bond to L_n;

E is a bond, CH, or a spacer group independently selected at each occurrence from the group: C₁-C₁₀ alkyl substituted with 0-3 R¹⁷, aryl substituted with 0-3 R¹⁷, C₃₋₁₀ cycloalkyl substituted with 0-3 R¹⁷, and a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R¹⁷;

R¹³, and R¹⁴ are each independently selected from the group: a bond to L_n, hydrogen, C₁-C₁₀ alkyl substituted with 0-3 R¹⁷, aryl substituted with 0-3 R¹⁷, a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R¹⁷, and an electron, provided that when one of R¹³ or R¹⁴ is an electron, then the other is also an electron;

alternatively, R¹³ and R¹⁴ combine to form =C(R²⁰)(R²¹);

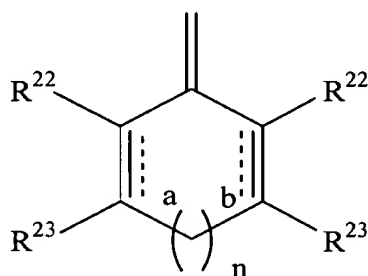
R¹⁷ is independently selected at each occurrence from the group: a bond to L_n, =O, F, Cl, Br, I, -CF₃, -CN, -CO₂R¹⁸, -C(=O)R¹⁸, -C(=O)N(R¹⁸)₂, -CH₂OR¹⁸, -OC(=O)R¹⁸, -OC(=O)OR^{18a}, -OR¹⁸, -OC(=O)N(R¹⁸)₂, -NR¹⁹C(=O)R¹⁸, -NR¹⁹C(=O)OR^{18a}, -NR¹⁹C(=O)N(R¹⁸)₂, -NR¹⁹SO₂N(R¹⁸)₂, -NR¹⁹SO₂R^{18a}, -SO₃H, -SO₂R^{18a}, -S(=O)R^{18a}, -SO₂N(R¹⁸)₂, -N(R¹⁸)₂, -NHC(=S)NHR¹⁸, =NOR¹⁸, -C(=O)NHN(R¹⁸)R^{18a}, -OCH₂CO₂H, and 2-(1-morpholino)ethoxy;

R₁₈, R_{18a}, and R₁₉ are independently selected at each occurrence from the group: a bond to L_n, H, and C₁-C₆ alkyl;

R²⁰ and R²¹ are independently selected from the group: H, C₁-C₅ alkyl, -CO₂R²⁵, C₂-C₅ 1-alkene substituted with 0-3 R²³, C₂-C₅ 1-alkyne substituted with 0-3 R²³, aryl

substituted with 0-3 R^{23} , and unsaturated 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O and substituted with 0-3 R^{23} ;

alternatively, R^{20} and R^{21} , taken together with the divalent carbon radical to which they are attached form:



R^{22} and R^{23} are independently selected from the group: H, and R^{24} ;

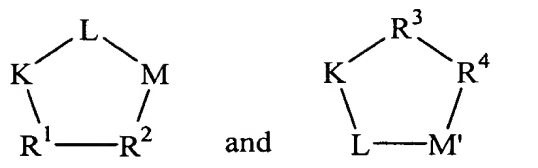
alternatively, R^{22} , R^{23} taken together form a fused aromatic or a 5-10 membered heterocyclic ring system containing 1-4 heteroatoms independently selected from N, S, and O;

R^{24} is independently selected at each occurrence from the group: $-\text{CO}_2R^{25}$, $-\text{C}(=\text{O})\text{N}(R^{25})_2$, $-\text{CH}_2\text{OR}^{25}$, $-\text{OC}(=\text{O})R^{25}$, $-\text{OR}^{25}$, $-\text{SO}_3\text{H}$, $-\text{N}(R^{25})_2$, and $-\text{OCH}_2\text{CO}_2\text{H}$; and,

R^{25} is independently selected at each occurrence from the group: H and $\text{C}_1\text{-C}_3$ alkyl.

Claim 5 (Currently Amended): A compound according to Claim 4, ~~the present invention provides a compound~~, wherein:

Q is a peptide selected from the group:



R¹ is L-valine, D-valine, D-lysine optionally substituted on the ε amino group with a bond to L_n or L-lysine optionally substituted on the ε amino group with a bond to L_n;

R² is L-phenylalanine, D-phenylalanine, D-1-naphthylalanine, 2-aminothiazole-4-acetic acid, L-lysine optionally substituted on the ε amino group with a bond to L_n or tyrosine, the tyrosine optionally substituted on the hydroxy group with a bond to L_n;

R³ is D-valine, D-phenylalanine, or L-lysine optionally substituted on the ε amino group with a bond to L_n;

R⁴ is D-phenylalanine, D-tyrosine substituted on the hydroxy group with a bond to L_n, or L-lysine optionally substituted on the ε amino group with a bond to L_n;

provided that one of R¹ and R² in each Q is substituted with a bond to L_n, and further provided that when R² is 2-aminothiazole-4-acetic acid, K is N methylarginine;

d is 1 or 2;

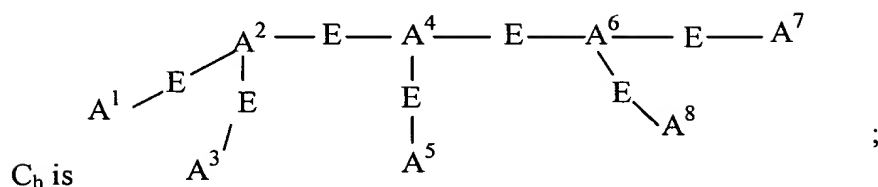
W is independently selected at each occurrence from the group: NHC(=O), C(=O)NH, C(=O), (CH₂CH₂O)_s, and (CH₂CH₂CH₂O)_t;

R⁶, R^{6a}, R⁷, R^{7a}, R⁸, R^{8a}, R⁹, and R^{9a} are independently selected at each occurrence from the group: H, NHC(=O)R¹¹, and a bond to C_h;

k is 0;

h" is selected from 0, 1, 2, and 3;

g is selected from 0, 1, 2, 3, 4, and 5;
 g' is selected from 0, 1, 2, 3, 4, and 5;
 g'' is selected from 0, 1, 2, 3, 4, and 5;
 g''' is selected from 0, 1, 2, 3, 4, and 5;
 s' is 1 or 2;
 t is 1 or 2;



A^1 is selected from the group: OH, and a bond to L_n ;

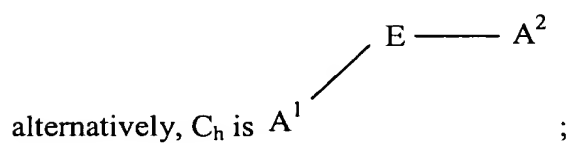
A^2 , A^4 , and A^6 are each N;

A^3 , A^5 , and A^8 are each OH;

A^7 is a bond to L_n or NH-bond to L_n ;

E is a C_2 alkyl substituted with 0-1 R^{17} ;

R^{17} is =O;



A^1 is NH_2 or $N=C(R^{20})(R^{21})$;

E is a bond;

A^2 is NHR^{13} ;

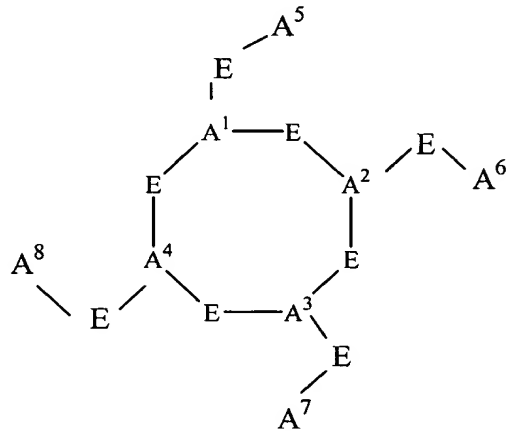
R^{13} is a heterocycle substituted with R^{17} , the heterocycle being selected from pyridine and pyrimidine;

R^{17} is selected from a bond to L_n , $C(=O)NHR^{18}$, and $C(=O)R^{18}$;

R^{18} is a bond to L_n ;

R^{24} is selected from the group: CO_2R^{25} , OR^{25} , SO_3H , and $N(R^{25})_2$;

R^{25} is independently selected at each occurrence from the group: hydrogen and methyl;



alternatively, C_h is

A^1 , A^2 , A^3 , and A^4 are each N;


A^5 , A^6 , and A^8 are each OH;

A^7 is a bond to L_n ;

E is a C_2 alkyl substituted with 0-1 R^{17} ; and,

R¹⁷ is =O.

Claim 6 (Currently Amended): A compound according to Claim 3, ~~the present invention~~
~~provides a compound~~ selected from the group:

- 
- (a) cyclo {Arg-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (b) cyclo {Arg-Gly-Asp-D-Tyr((N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-18-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl)-3-aminopropyl)-Val};
- (c) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo {D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp})-cyclo {D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp};
- (d) cyclo(Arg-Gly-Asp-D-Tyr-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));
- (e) cyclo {Arg-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));
- (f) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo {Lys-Arg-Gly-Asp-D-Phe})-cyclo {Lys-Arg-Gly-Asp-D-Phe};
- (g) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Phe-Glu(cyclo {Lys-Arg-Gly-Asp-D-Phe})-cyclo {Lys-Arg-Gly-Asp-D-Phe};
- (h) cyclo {Arg-Gly-Asp-D-Nal-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]));

- 
- (i) [2-[[[5-[carbonyl]-2-pyridinyl]-hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo {Lys-Arg-Gly-Asp-D-Nal})-cyclo {Lys-Arg-Gly-Asp-D-Nal};
- (j) cyclo {Arg-Gly-Asp-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Val} ;
- (k) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo {Lys-D-Val-Arg-Gly-Asp})-cyclo {Lys-D-Val-Arg-Gly-Asp};
- (l) {cyclo(Arg-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly};
- (m) cyclo {D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Phe-D-Asp-Gly-Arg};
- (n) [2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo {D-Lys-D-Phe-D-Asp-Gly-Arg})-cyclo {D-Lys-D-Phe-D-Asp-Gly-Arg};
- (o) cyclo {D-Phe-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Asp-Gly-Arg};
- (p) cyclo {N-Me-Arg-Gly-Asp-ATA-D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};
- (q) cyclo {Cit-Gly-Asp-D-Phe-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};
- (r) 2-(1,4,7,10-tetraaza-4,7,10-tris(carboxymethyl)-1-cyclododecyl)acetyl-Glu(cyclo {Lys-Arg-Gly-Asp-D-Phe})-cyclo {Lys-Arg-Gly-Asp-D-Phe};

- (s) cyclo{Arg-Gly-Asp-D-Phe-Lys(DTPA)};
- (t) cyclo{Arg-Gly-Asp-D-Phe-Lys}2(DTPA);
- (u) Cyclo{Arg-Gly-Asp-D-Tyr(N-DTPA-3-aminopropyl)-Val};
- (v) cyclo{Orn(d-N-2-Imidazoliny)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (w) cyclo{Lys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (x) cyclo{Cys(2-aminoethyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (y) cyclo{HomoLys-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (z) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (aa) cyclo{Dap(b-(2-benzimidazolylacetyl))-Gly-Asp-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-Val};
- (bb) cyclo{Orn(d-N-2-Imidazoliny)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};
- (cc) cyclo{Orn(d-N-Benzylcarbamoyl)-Gly-Asp-D-Phe-Lys(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])};

(dd) cyclo{Lys-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}};

(ee) cyclo{Orn(d-N-Benzylcarbamoyl)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}}; and,

(ff) cyclo{Orn(d-N-2-Imidazoliny)-D-Val-D-Tyr(N-[2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-3-aminopropyl)-D-Asp-Gly}};

or a pharmaceutically acceptable salt form thereof.

Claim 7 (Original): A kit comprising a compound of Claim 3, or a pharmaceutically acceptable salt form thereof and a pharmaceutically acceptable carrier.

Claim 8 (Original): A kit according to Claim 7, wherein the kit further comprises one or more ancillary ligands and a reducing agent.

Claim 9 (Original): A kit according to Claim 8, wherein the ancillary ligands are tricine and TPPTS.

Claim 10 (Original): A kit according to Claim 9, wherein the reducing agent is tin(II).


Claim 11 (Canceled)

Claim 12 (Currently Amended): ~~A composition according to Claim 11~~
metallopharmaceutical comprising the compound of Claim 1 and, wherein the
~~metallopharmaceutical is a diagnostic radiopharmaceutical, the metal is a radioisotope~~
selected from the group: ^{99m}Tc, ⁹⁵Tc, ¹¹¹In, ⁶²Cu, ⁶⁴Cu, ⁶⁷Ga, and ⁶⁸Ga, wherein the
targeting moiety is a peptide or a mimetic thereof and the linking group is present
between the targeting moiety and chelator.

Claim 13 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 12, wherein the targeting moiety is a cyclic pentapeptide.

Claim 14. (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 13, wherein the radioisotope is ^{99m}Tc or ^{95}Tc , and the ~~radiopharmaceutical~~ metallopharmaceutical further comprises a first ancillary ligand and a second ancillary ligand capable of stabilizing the ~~radiopharmaceutical~~ metallopharmaceutical.

Claim 15 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 14, wherein the radioisotope is ^{99m}Tc .

 Claim 16 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 15, wherein the ~~radiopharmaceutical~~ metallopharmaceutical is selected from the group:

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]-3\text{-aminopropyl})\text{-Val}))$;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPMS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPDS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$;

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-D-Val-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}]-3\text{-aminopropyl})\text{-D-Asp-Gly}))$;


$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{N}-[[5-[\text{carbonyl}]-2\text{-pyridinyl}]\text{diazenido}])))$;

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Tyr-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido]]));

^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Phe-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe}));

^{99m}Tc(tricine)(TPPTS)(cyclo{Arg-Gly-Asp-D-Nal-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]]});

^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]-hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{Lys-Arg-Gly-Asp-D-Nal})-cyclo{Lys-Arg-Gly-Asp-D-Nal});

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-D-Tyr((N-[[5-[carbonyl]-2-pyridinyl]diazenido]-18-amino-14-aza-4,7,10-oxy-15-oxo-octadecoyl)-3-aminopropyl)-Val));

^{99m}Tc(tricine)(TPPTS)(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-Glu(O-cyclo(Lys-Arg-Gly-Asp-D-Phe))-O-cyclo(Lys-Arg-Gly-Asp-D-Phe));

^{99m}Tc(tricine)(TPPTS)(N-[[5-[carbonyl]-2-pyridinyl]diazenido]-Glu(O-cyclo(D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp))-O-cyclo(D-Tyr(3-aminopropyl)-Val-Arg-Gly-Asp));

^{99m}Tc(tricine)(TPPTS)(cyclo(Arg-Gly-Asp-Lys(N-[[5-[carbonyl]-2-pyridinyl]diazenido))-D-Val));

^{99m}Tc(tricine)(TPPTS)(cyclo{D-Lys([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid])-D-Phe-D-Asp-Gly-Arg});

^{99m}Tc(tricine)(TPPTS)([2-[[[5-[carbonyl]-2-pyridinyl]hydrazono]methyl]-benzenesulfonic acid]-Glu(cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg})-cyclo{D-Lys-D-Phe-D-Asp-Gly-Arg});

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{D-Phe-D-Lys}([2-[[[5-[\text{carbonyl}]-2-\text{pyridinyl}]\text{hydrazono}]\text{methyl}]-\text{benzenesulfonic acid}])-\text{D-Asp-Gly-Arg}\});$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}(\text{N-Me-Arg-Gly-Asp-ATA-D-Lys}(\text{N}-[[5-[\text{carbonyl}]-2-\text{pyridinyl}]\text{diazenido}]));$

$^{99m}\text{Tc}(\text{tricine})(\text{TPPTS})(\text{cyclo}\{\text{Cit-Gly-Asp-D-Phe-Lys}([2-[[[5-[\text{carbonyl}]-2-\text{pyridinyl}]\text{hydrazono}]\text{methyl}]-\text{benzenesulfonic acid}])\});$ and,

$^{99m}\text{Tc}(\text{tricine})(1,2,4\text{-triazole})(\text{cyclo}(\text{Arg-Gly-Asp-D-Tyr}(\text{N}-[[5-[\text{carbonyl}]-2-\text{pyridinyl}]\text{diazenido}]-3\text{-aminopropyl})-\text{Val})).$

Claim 17 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 13, wherein the radioisotope is ^{111}In .

Claim 18 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 17, wherein the ~~radiopharmaceutical~~ metallopharmaceutical is selected from the group:

$(\text{DOTA-}^{111}\text{In})\text{-Glu}(\text{cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\})\text{-cyclo}\{\text{Lys-Arg-Gly-Asp-D-Phe}\};$

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys}(\text{DTPA-}^{111}\text{In}));$ and,

$\text{cyclo}(\text{Arg-Gly-Asp-D-Phe-Lys})_2(\text{DTPA-}^{111}\text{In}).$


Claim 19 (Currently Amended): A ~~composition according to Claim 11~~ metallopharmaceutical comprising the compound of Claim 1 and, wherein the metallopharmaceutical is a therapeutic radiopharmaceutical, the metal is a radioisotope selected from the group: ^{186}Re , ^{188}Re , ^{153}Sm , ^{166}Ho , ^{177}Lu , ^{149}Pm , ^{90}Y , ^{212}Bi , ^{103}Pd , ^{109}Pd , ^{159}Gd , ^{140}La , ^{198}Au , ^{199}Au , ^{169}Yb , ^{175}Yb , ^{165}Dy , ^{166}Dy , ^{67}Cu , ^{105}Rh ,

^{111}Ag , and ^{192}Ir , the targeting moiety is a peptide or a mimetic thereof and the linking group is present between the targeting moiety and chelator.

Claim 20 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 19, wherein the targeting moiety is a cyclic pentapeptide.

Claim 21 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 20, wherein the radioisotope is ^{153}Sm .

Claim 22 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 21, wherein the ~~radiopharmaceutical~~ metallopharmaceutical is selected from the group:

 cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA- ^{153}Sm));

cyclo(Arg-Gly-Asp-D-Phe-Lys)₂(DTPA- ^{153}Sm); and,

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(^{153}Sm)-3-aminopropyl)-Val).

Claim 23 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 20, wherein the radioisotope is ^{177}Lu .

Claim 24 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 23, wherein the ~~radiopharmaceutical~~ metallopharmaceutical is selected from the group:

cyclo(Arg-Gly-Asp-D-Phe-Lys(DTPA- ^{177}Lu));

(DOTA- ^{177}Lu)-Glu(cyclo {Lys-Arg-Gly-Asp-D-Phe})-cyclo {Lys-Arg-Gly-Asp-D-Phe};

cyclo(Arg-Gly-Asp-D-Phe-Lys)₂(DTPA- ^{177}Lu); and,

cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(¹⁷⁷Lu)-3-aminopropyl)-Val).

Claim 25 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 20, wherein the radioisotope is ⁹⁰Y.

Claim 26 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 25, wherein the ~~radiopharmaceutical~~ metallopharmaceutical is:

(DOTA-⁹⁰Y)-Glu(cyclo{Lys-Arg-Gly-Asp-D-Phe})-cyclo{Lys-Arg-Gly-Asp-D-Phe};

Claim 27 (Currently Amended): A ~~composition according to Claim 11~~ metallopharmaceutical comprising the compound of Claim 1 and, wherein the metallopharmaceutical is a MRI contrast agent, the metal is a paramagnetic metal ion selected from the group: Gd(III), Dy(III), Fe(III), and Mn(II), wherein the targeting moiety is a peptide or a mimetic and the linking group is present between the targeting moiety and chelator.

Claim 28 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 27, wherein the targeting moiety is a cyclic pentapeptide.

Claim 29 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 28, wherein the metal ion is Gd(III).

Claim 30 (Currently Amended): A ~~composition~~ metallopharmaceutical according to Claim 29, wherein the contrast agent is:


cyclo(Arg-Gly-Asp-D-Tyr(N-DTPA(Gd(III))-3-aminopropyl)-Val).

Claim 31 (Currently Amended): A ~~composition according to Claim 11~~ metallopharmaceutical comprising the compound of Claim 1 and a, wherein the

~~metallopharmaceutical is a X-ray contrast agent, the metal is selected from the group:~~
Re, Sm, Ho, Lu, Pm, Y, Bi, Pd, Gd, La, Au, Au, Yb, Dy, Cu, Rh, Ag, and Ir, wherein
the targeting moiety is a cyclic pentapeptide, and the linking group is present between
the targeting moiety and chelator.

Claim 32 (Currently Amended): A method of treating rheumatoid arthritis in a patient
comprising: administering a ~~therapeutic radiopharmaceutical~~ metallopharmaceutical
of Claim ~~44~~ 19 capable of localizing in new angiogenic vasculature to a patient by
injection or infusion.

Claim 33 (Currently Amended): A method of treating cancer in a patient comprising:
administering to a patient in need thereof a ~~therapeutic radiopharmaceutical~~
metallopharmaceutical of Claim ~~44~~ 19 by injection or infusion.

 Claim 34 (Currently Amended): A method of imaging formation of new blood vessels in a
patient comprising: (1) administering a metallopharmaceutical comprising the
compound of Claim 1 and a metal ~~diagnostic radiopharmaceutical, a MRI contrast~~
~~agent, or a X-ray contrast agent of Claim 44~~ to a patient by injection or infusion; (2)
imaging the area of the patient wherein the desired formation of new blood vessels is
located.

Claim 35 (Currently Amended): A method of imaging cancer in a patient comprising: (1)
administering a ~~diagnostic radiopharmaceutical~~ metallopharmaceutical of Claim 12 to
a patient by injection or infusion; (2) imaging the patient using planar or SPECT
gamma scintigraphy, or positron emission tomography.

Claims 36-47 (Canceled)

Claim 48 (Currently Amended): A therapeutic radiopharmaceutical composition,
comprising:

(a) a ~~therapeutic radiopharmaceutical~~ metallopharmaceutical of Claim ~~44~~ 19; and,

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(b) a parenterally acceptable carrier.

Claim 49 (Currently Amended): A diagnostic radiopharmaceutical composition, comprising:

(a) a metallopharmaceutical comprising the compound of Claim 1 and a metal
~~diagnostic radiopharmaceutical, a MRI contrast agent, or a X-ray contrast agent of~~
~~Claim 11;~~ and,

(b) a parenterally acceptable carrier.

Claim 50 (Original): A therapeutic radiopharmaceutical composition, comprising: a
radiolabelled targeting moiety, wherein the targeting moiety is a compound Q of
Claim 3 and the radiolabel is a therapeutic isotope selected from the group: ^{35}S , ^{32}P ,
 ^{125}I , ^{131}I , and ^{211}At .

Claim 51 (Canceled)